

The documentation and process conversion measures necessary to comply with this revision shall be completed by 26 November 1994.

INCH-POUND

MIL-S-19500/323E
26 August 1994
SUPERSEDING
MIL-S-19500/323D
15 September 1993

MILITARY SPECIFICATION
SEMICONDUCTOR DEVICE, TRANSISTOR, PNP, SILICON, SWITCHING
TYPES 2N3250A, 2N3251A, JAN, JANTX, JANTXV, AND JANS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the detail requirements for PNP silicon switching transistors. Four levels of product assurance are provided for each device type as specified in MIL-S-19500.

1.2 Physical dimensions. See 3.3.

1.3 Maximum ratings.

| PT 1/ T _A = +25°C | PT 2/ T _C = +25°C | V _{CB0} | V _{CE0} | V _{EB0} | I _C | T _{op} and T _{STG} | R _{θJA} |
|---------------------------------|---------------------------------|------------------|------------------|------------------|----------------|--------------------------------------|------------------|
| W | W | V dc | V dc | V dc | mA dc | °C | °C/W |
| 0.36 | 1.2 | 60 | 60 | 5.0 | 200 | -65 to +175 | 485.4 |

1/ Derate linearly 2.06 mW/°C above T_A = +25°C.

2/ Derate linearly 6.90 mW/°C above T_C = +25°C.

1.4 Primary electrical characteristics.

| | hFE1 | hFE3 1/ | hFE4 1/ | hfe |
|---------|--|---|---|---|
| Limits | V _{CE} = 1.0 V dc I _C = 0.1 mA dc | V _{CE} = 1.0 V dc I _C = 10 mA dc | V _{CE} = 1.0 V dc I _C = 50 mA dc | f = 100 MHz V _{CE} = 20 V dc I _C = 10 mA dc |
| | Min Max | Min Max | Min Max | Min Max |
| 2N3250A | 40 | 50 150 | 15 | 2.5 9.0 |
| 2N3251A | 80 | 100 300 | 30 | 3.0 9.0 |

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Defense Electronics Supply Center, ATTN: DESC-ELDT, 1507 Wilmington Pike, Dayton, OH 45444-5765 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 5961

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| Limits | $r_b' C_c$ $V_{CE} = 20 \text{ V dc}$ $I_C = 10 \text{ mA dc}$ $f = 31.8 \text{ MHz}$ | $V_{CE(SAT)1}$ $I_C = 10 \text{ mA dc}$ $I_B = 1.0 \text{ mA dc}$ | C_{obo} $V_{CB} = 10 \text{ V dc}$ $I_E = 0$ $100 \text{ kHz} \leq f \leq 1 \text{ MHz}$ | t_{on} $I_C = 10 \text{ mA dc}$ $I_B = 1.0 \text{ mA dc}$ | t_{off} $I_C = 10 \text{ mA dc}$ $I_B = 1.0 \text{ mA dc}$ | N_F $V_{CE} = 5 \text{ V dc}$ $I_C = .1 \text{ mA dc}$ $.1 \text{ mA dc}$ $R_g = 1 \text{ k}\Omega$ $f = 100 \text{ Hz}$ | |
|--------|--|---|---|---|--|---|-----------|
| | | | | | 2N3250A | 2N3251A | |
| Min | 5 | <u>V dc</u> | <u>pF</u> | <u>ns</u> | <u>ns</u> | <u>ns</u> | <u>dB</u> |
| Max | 250 | 0.25 | 6 | 70 | 250 | 300 | 6 |

1/ Pulsed (see 4.5.1).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATION

MILITARY

MIL-S-19500 - Semiconductor Devices, General Specification for.

STANDARD

MILITARY

MIL-STD-750 - Test Methods for Semiconductor Devices.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Associated detail specification. The individual item requirements shall be in accordance with MIL-S-19500, and as specified herein.

3.2 Abbreviations, symbols, and definitions. Abbreviations, symbols, and definitions used herein shall be as specified in MIL-S-19500.

I_{BEX} - - - Base cutoff current (dc) with specified circuit between the collector and emitter.

3.3 Design, construction, and physical dimensions. The design, construction, and physical dimensions shall be as specified in MIL-S-19500, appendix F, figure 9.

3.3.1 Lead finish. Lead finish shall be solderable in accordance with MIL-S-19500. Where a choice of lead finish is desired, it shall be specified in the acquisition document (see 6.2).

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3.4 Marking. Marking shall be in accordance with MIL-S-19500. At the option of the manufacturer, the following marking may be omitted from the body of the transistor:

- a. Country of origin.
- b. Manufacturers identification.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection shall be in accordance with MIL-S-19500, and as specified herein.

4.2 Qualification inspection. Qualification inspection shall be in accordance with MIL-S-19500.

4.3 Screening (JANS, JANTX, and JANTXV levels). Screening shall be in accordance with table II of MIL-S-19500, and as specified herein. The following measurements shall be made in accordance with table I herein. Devices that exceed the limits of table I herein shall not be acceptable.

| Screen (see table II of MIL-S-19500) | Measurement | |
|--------------------------------------|---|---|
| | JANS level | JANTX and JANTXV levels |
| 9 | hFE3, ICBO | Not applicable |
| 11 | ICBO; hFE3; Δ ICBO = 100 percent of initial value or 5 nA dc, whichever is greater; Δ hFE3 = 25 percent change from initial value. | ICBO and hFE3 |
| 12 | See 4.3.1 | See 4.3.1 |
| 13 | Subgroups 2 and 3 of table I herein; Δ ICBO = 100 percent of initial value or 5 nA dc, whichever is greater; Δ hFE3 = 25 percent change from initial value. | Subgroup 2 of table I herein; Δ ICBO = 100 percent of initial value or 5 nA dc, whichever is greater; Δ hFE3 = 25 percent of change from initial value. |

4.3.1 Power burn-in conditions. Power burn-in conditions are as follows: T_A = Room ambient as defined in 4.5 of MIL-STD-750; V_{CB} = 25 V dc (10 V dc for JANS); P_T = 360 mW.

NOTE: No heat sink or forced air cooling on the devices shall be permitted.

4.4 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-S-19500.

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with MIL-S-19500 and table I herein.

4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the conditions specified for subgroup testing in IVa (JANS) and table IVb (JAN, JANTX, and JANTXV) of MIL-S-19500, and as follows. Electrical measurements (end-points) and delta requirements shall be in accordance with the applicable steps and footnotes of table II herein.

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4.4.2.1 Group B inspection, table IVa (JANS) of MIL-S-19500.

| Subgroup | Method | Condition |
|----------|--------|--|
| B4 | 1037 | $V_{CB} = 10$ V dc; $P_T = 360$ mW at $T_A = +25^\circ\text{C} \pm 3^\circ\text{C}$; $t_{on} = t_{off} = 3$ minutes minimum for 2,000 cycles. No heat sink or forced-air cooling on devices shall be permitted. |
| B5 | 1027 | $V_{CB} = 10$ V dc; $T_A = +125^\circ\text{C} \pm 25^\circ\text{C}$ for 96 hours, $P_T = 360$ mW at $T_A = +100^\circ\text{C}$ or adjusted as required according to the chosen T_A to give an average $T_J = +275^\circ\text{C}$. |
| B6 | 3131 | See 4.5.3. |

4.4.2.2 Group B inspection, table IVb (JANTX and JANTXV) of MIL-S-19500.

| Subgroup | Method | Condition |
|----------|--------|---|
| B3 | 1027 | 1,000 hrs at $V_{CB} \geq 10$ V dc; $P_T = 360$ mW at $T_A = +30^\circ\text{C} \pm 5^\circ\text{C}$. No heat sink or forced-air cooling on the devices shall be permitted. |
| B3 | 2037 | Test condition A. |
| B5 | 3131 | See 4.5.3 (Applies to qualification of new product only). |

4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in table V of MIL-S-19500, and as follows. Electrical measurements (end-points) and delta requirements shall be in accordance with the applicable steps and footnotes of table II herein.

| Subgroup | Method | Condition |
|----------|--------|---|
| C2 | 2036 | Test condition E. |
| C6 | 1026 | $V_{CB} \geq 10$ V dc, $P_T = 360$ mW at $T_A = +30^\circ\text{C} \pm 5^\circ\text{C}$. No heat sink or forced-air cooling on device shall be permitted. |

4.5 Method of inspection. Methods of inspection shall be as specified in the appropriate tables and as follows.

4.5.1 Pulse measurements. Conditions for pulse measurement shall be as specified in section 4 of MIL-STD-750.

4.5.2 Collector - base time constant. This parameter may be determined by applying an rf signal voltage of 1.0 volt (rms) across the collector-base terminals, and measuring the ac voltage drop (V_{eb}) with a high impedance rf voltmeter across the emitter-base terminals.

With $f = 31.8$ MHz used for the 1.0 V signal, the following computation applies; $r_b'C_C(\text{ps}) = 5 \times V_{eb}$ (millivolts), see figure 3.

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TABLE I. Group A inspection.

| Inspection 1/ | MIL-STD-750 | | Symbol | Limit | | Unit |
|--|-------------|--|------------|-----------|------------|--------------------|
| | Method | Conditions | | Min | Max | |
| <u>Subgroup 1</u> | | | | | | |
| Visual and mechanical examination | 2071 | | | | | |
| <u>Subgroup 2</u> | | | | | | |
| Breakdown voltage collector - base | 3001 | Bias condition D; $I_C = 10 \mu A$ dc | $V(BR)CBO$ | 60 | | V dc |
| Breakdown voltage emitter - base | 3026 | Bias condition D; $I_E = 10 \mu A$ dc | $V(BR)EBO$ | 5 | | V dc |
| Breakdown voltage collector - emitter | 3011 | Bias condition D; $I_C = 10$ mA dc; pulsed (see 4.5.1) | $V(BR)CEO$ | 60 | | V dc |
| Collector - base cutoff current | 3036 | Bias condition D; $V_{CB} = 40$ V dc | I_{CBO} | | 20 | nA dc |
| Collector - emitter cutoff current | 3041 | Bias condition A; $V_{CE} = 40$ V dc; $V_{BE} = 3.0$ V dc | I_{CEX1} | | 20 | nA dc |
| Base cutoff current | 3041 | Bias condition A; $V_{CE} = 40$ V dc; $V_{BE} = -3.0$ V dc | I_{BEX} | | 50 | nA dc |
| Forward-current transfer ratio 2N3250A 2N3251A | 3076 | $V_{CE} = 1.0$ V dc; $I_C = 0.1$ mA dc | h_{FE1} | 40 80 | | |
| Forward-current transfer ratio 2N3250A 2N3251A | 3076 | $V_{CE} = 1.0$ V dc; $I_C = 1.0$ mA dc | h_{FE2} | 45 90 | | |
| Forward-current transfer ratio 2N3250A 2N3251A | 3076 | $V_{CE} = 1.0$ V dc; $I_C = 10$ mA dc; pulsed (see 4.5.1) | h_{FE3} | 50 100 | 150 300 | |
| Forward-current transfer ratio 2N3250A 2N3251A | 3076 | $V_{CE} = 1.0$ V dc; $I_C = 50$ mA dc; pulsed (see 4.5.1) | h_{FE4} | 15 30 | | |
| Current gain linearity 2N3250A 2N3251A | | $\frac{ h_{FE3} - h_{FE1} }{h_{FE3}} \times 100$ | h_{FE} | | 40 30 | percent percent |

See footnote at end of table.

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TABLE I. Group A inspection - Continued.

| Inspection 1/ | MIL-STD-750 | | Symbol | Limit | | Unit |
|---|-------------|--|----------------|------------|------------|------------------|
| | Method | Conditions | | Min | Max | |
| <u>Subgroup 2</u> - Continued. | | | | | | |
| Collector - emitter saturated voltage | 3071 | $I_C = 10 \text{ mA dc};$ $I_B = 1.0 \text{ mA dc}$ | $V_{CE(sat)1}$ | | 0.25 | V dc |
| Collector - emitter saturated voltage | 3071 | $I_C = 50 \text{ mA dc};$ $I_B = 5.0 \text{ mA dc};$ pulsed (see 4.5.1) | $V_{CE(sat)2}$ | | 0.50 | V dc |
| Base - emitter saturated voltage | 3066 | Test condition A; $I_C = 10 \text{ mA dc};$ $I_B = 1.0 \text{ mA dc}$ | $V_{BE(sat)1}$ | 0.60 | 0.90 | V dc |
| Base - emitter saturated voltage | 3066 | Test condition A; $I_C = 50 \text{ mA dc};$ $I_B = 5.0 \text{ mA dc};$ pulsed (see 4.5.1) | $V_{BE(sat)2}$ | | 1.20 | V dc |
| <u>Subgroup 3</u> | | | | | | |
| High-temperature operation: | | $T_A = +150^\circ\text{C}$ | | | | |
| Collector - emitter cutoff current | 3041 | Bias condition A; $V_{CE} = 40 \text{ V dc};$ $V_{BE} = 3.0 \text{ V dc}$ | I_{CEX2} | | 20 | $\mu\text{A dc}$ |
| Low-temperature operation: | | $T_A = -55^\circ\text{C}$ | | | | |
| Forward-current transfer ratio 2N3250A 2N3251A | 3076 | $V_{CE} = 1.0 \text{ V dc};$ $I_C = 1.0 \text{ mA dc}$ | h_{FE5} | 20 40 | | |
| <u>Subgroup 4</u> | | | | | | |
| Small-signal short-circuit forward-current transfer ratio 2N3250A 2N3251A | 3206 | $V_{CE} = 10 \text{ V dc};$ $I_C = 1 \text{ mA dc};$ $f = 1 \text{ kHz}$ | h_{fe} | 50 100 | 200 400 | |
| Magnitude of common emitter small-signal short-circuit forward-current transfer ratio 2N3250A 2N3251A | 3306 | $V_{CE} = 20 \text{ V dc};$ $I_C = 10 \text{ mA dc};$ $f = 100 \text{ MHz}$ | $ h_{fe} $ | 2.5 3.0 | 9.0 9.0 | |
| Open circuit output capacitance | 3236 | $V_{CB} = 10 \text{ V dc};$ $I_E = 0$ | C_{obo} | | 6 | pF |

See footnote at end of table.

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TABLE I. Group A inspection - Continued.

| Inspection 1/ | MIL-STD-750 | | Symbol | Limit | | Unit |
|--|-------------|---|-----------|-------|-----|------------------|
| | Method | Conditions | | Min | Max | |
| Subgroup 4 - Continued. | | | | | | |
| Input capacitance (output open-circuited) | 3240 | $V_{EB} = 1.0 \text{ V dc};$ $I_C = 0;$ $100 \text{ kHz} \leq f \leq 1 \text{ MHz}$ | C_{ibo} | | 8 | pf |
| Collector - base time constant | | $V_{CE} = 20 \text{ V dc};$ $I_C = 10 \text{ mA dc};$ $f = 31.8 \text{ MHz};$ (see 4.5.2 and figure 3) | $r_b'C_c$ | 5 | 250 | ps |
| Noise figure | 3246 | $V_{CE} = 5.0 \text{ V dc};$ $I_C = 100 \mu\text{A dc};$ $R_g = 1 \text{ k}\Omega;$ $f = 100 \text{ Hz}$ | NF | | 6 | dB |
| Pulse response: | | | | | | |
| On time | 3251 | Test condition A; $V_{BE} = 0.5 \text{ V dc};$ $I_C = 10 \text{ mA dc};$ $I_{B1} = 1.0 \text{ mA dc};$ (see figure 1) | t_{on} | | 70 | ns |
| Off time | 3251 | Test condition A; $I_C = 10 \text{ mA dc};$ $I_{B1} = I_{B2} = 1.0 \text{ mA dc};$ (see figure 2) | t_{off} | | | |
| 2N3250A | | | | | 250 | ns |
| 2N3251A | | | | | 300 | ns |
| Small-signal open circuit reverse-voltage transfer ratio | 3211 | $V_{CE} = 10 \text{ V dc};$ $I_C = 1.0 \text{ mA dc}$ $f = 1 \text{ kHz}$ | h_{re} | | | |
| 2N3250A | | | | | 10 | $\times 10^{-4}$ |
| 2N3251A | | | | | 20 | $\times 10^{-4}$ |
| Small-signal short circuit input impedance | 3201 | $V_{CE} = 10 \text{ V dc};$ $I_C = 1.0 \text{ mA dc};$ $f = 1 \text{ kHz}$ | h_{ie} | | | |
| 2N3250A | | | | 1 | 6 | $\text{k}\Omega$ |
| 2N3251A | | | | 2 | 12 | $\text{k}\Omega$ |
| Small-signal open circuit output admittance | 3216 | $V_{CE} = 10 \text{ V dc};$ $I_C = 1.0 \text{ mA dc}$ $f = 1 \text{ kHz}$ | h_{oe} | | | |
| 2N3250A | | | | 4 | 40 | μmhos |
| 2N3251A | | | | 10 | 60 | μmhos |

1/ For sampling plan, see MIL-S-19500.

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TABLE II. Groups B and C electrical measurements. 1/ 2/ 3/

| Step | Inspection | MIL-STD-750 | | Symbol | Limits | | Unit |
|------|--|-------------|---|-----------------------|--|------------|-------|
| | | Method | Conditions | | Min | Max | |
| 1. | Collector - base cutoff current | 3036 | Bias condition D; $V_{CB} = 40$ V dc | I_{CBO} | | 20 | nA dc |
| 2. | Collector - base cutoff current | 3036 | Bias condition D; $V_{CB} = 40$ V dc | I_{CBO} | | 40 | nA dc |
| 3. | Forward-current transfer ratio 2N3250A 2N3251A | 3076 | $V_{CE} = 1.0$ V dc; $I_C = 10$ mA dc; pulsed (see 4.5.1) | h_{FE3} | 50 100 | 150 300 | |
| 4. | Collector - emitter voltage (saturated) | 3071 | $I_C = 50$ mA dc; $I_B = 5.0$ mA dc | $V_{CE(sat)2}$ | | 0.5 | V dc |
| 5. | Forward-current transfer ratio | 3076 | $V_{CE} = 1.0$ V dc; $I_C = 10$ mA dc; pulsed (see 4.5.1) | Δh_{FE3} | ± 25 percent change from initial value. | | |
| 6. | Collector - base cutoff current | 3036 | Bias condition D; $V_{CB} = 40$ V dc | ΔI_{CBO} | 100 percent of initial value or 5 nA dc, whichever is greater. | | |
| 7. | Collector - emitter voltage (saturated) | 3071 | $I_C = 50$ mA dc; $I_B = 5.0$ mA dc | $\Delta V_{CE(sat)2}$ | 50 mV dc change from initial value. | | |

1/ The electrical measurements for table IVa (JANS) of MIL-S-19500 are as follows:

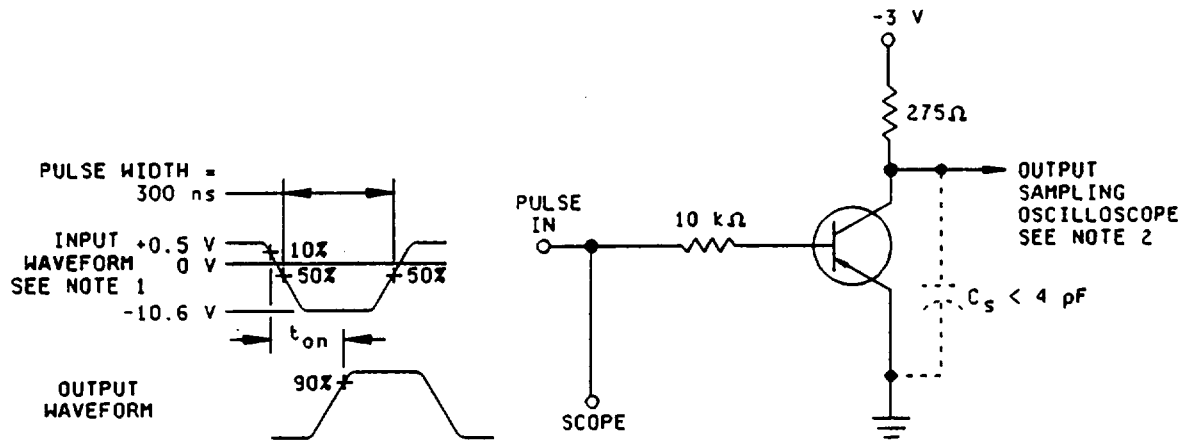
- a. Subgroup 3, see table II herein, steps 1, 3, and 4.
- b. Subgroup 4, see table II herein, steps 1, 3, 4, and 7.
- c. Subgroup 5, see table II herein, steps 1, 3, 4, 5, 6, and 7.

2/ The electrical measurements for table IVb (JAN, JANIX, and JANIXV) of MIL-S-19500 are as follows:

- a. Subgroup 2, see table II herein, steps 1 and 3.
- b. Subgroups 3 and 6, see table II herein, steps 2 and 5.

3/ The electrical measurements for table V of MIL-S-19500 are as follows:

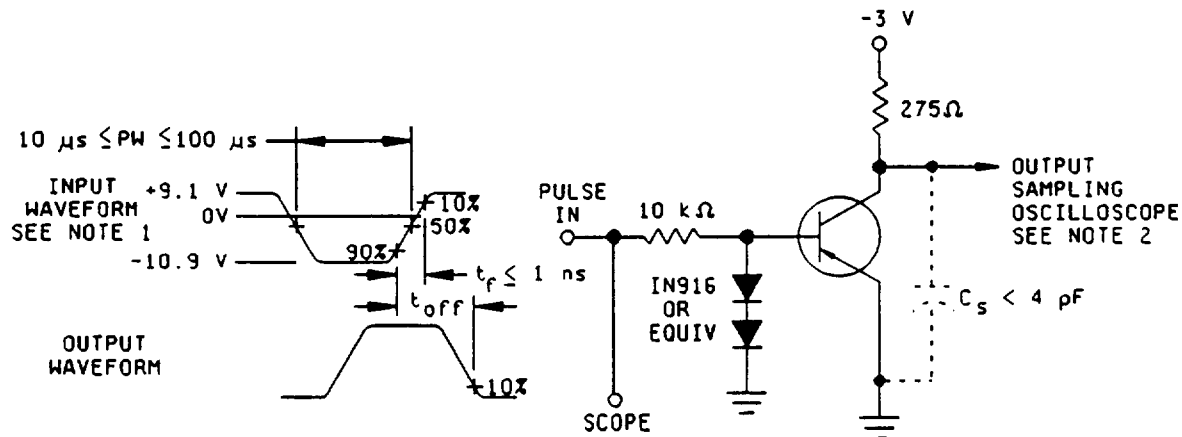
- a. Subgroups 2 and 3, table II herein, steps 1 and 3.
- b. Subgroup 6, see table II herein, steps 1, 3, 4, 5, and 6 (for JANS) and 2 and 5 (for JAN, JANIX, and JANIXV).



NOTES:

1. The rise time (t_r) of the applied pulse shall be ≤ 1.0 ns, duty cycle ≤ 2 percent, and the generator source Z shall be 50 Ω .
2. Sampling oscilloscope: $Z_{IN} \geq 100$ k Ω ; rise time (t_r) $\leq .1$ ns.

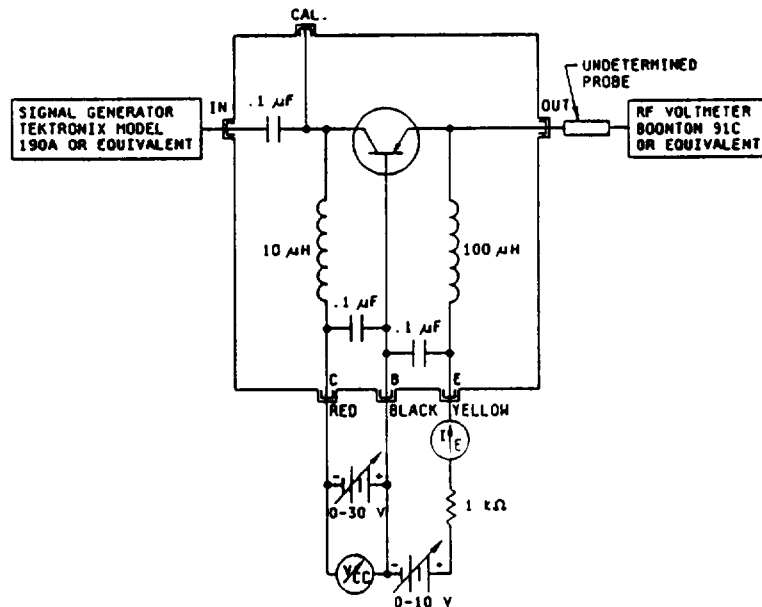
FIGURE 1. Delay and rise time, test circuit.



NOTES:

1. The rise time (t_r) of the applied pulse shall be ≤ 1.0 ns, duty cycle ≤ 2 percent, and the generator source Z shall be 50 Ω .
2. Sampling oscilloscope: $Z_{IN} \geq 100$ k Ω ; rise time (t_r) $\leq .1$ ns.

FIGURE 2. Storage and fall time, test circuit.



Procedure:

1. Set signal generator to 31.8 MHz and connect to "IN" connector on test jig.
2. Connect low voltage dc power supplies as shown. A 1 K Ω resistor should be placed in series with the emitter power supply to prevent damage to transistors being tested.
3. Set collector supply for $V_{CE} = -20$ V dc, and emitter supply for $I_C = -10$ mA.
4. Connect RF voltmeter with unterminated probe adapter to "CAL" connector on test jig. Adjust signal generator until RF voltage is 1 volt (NOTE: Decade switching of voltmeter should be accurate from 1 mV to 3 volts. If not, input voltage may be set using voltage dividers, utilizing lower scales of the RF voltmeter. If this is done, the voltage dividers should be left in place when the voltmeter is removed, as they constitute a load on the input of the circuit.)
5. Remove RF voltmeter from "CAL" connector and connect to "OUT" connector. Meter will now read $r_b'C_c$ as follows:

| Meter range full scale | $r_b'C_c$ range |
|------------------------|-----------------|
| .003 volts | 10 to 30 ps |
| .01 volts | 30 to 100 ps |
| .03 volts | 100 to 300 ps |
| .1 volt | 150 to 500 ps |

FIGURE 3. Collector-base time constant test circuit (an equivalent circuit may be used).

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4.5.3 Thermal resistance. Thermal resistance measurements shall be conducted in accordance with test method 3131 of MIL-STD-750. The following details shall apply:

- a. Minimum collector magnitude shall be 36 mA dc.
- b. Collector to emitter voltage magnitude shall be 10 V dc.
- c. Reference point temperature shall be $+25^{\circ}\text{C} \leq T_R \leq +35^{\circ}\text{C}$. The chosen reference temperature shall be recorded before the test is started.
- d. Maximum $R_{\theta JA}$ limit shall be 485.4°C/W .

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-S-19500.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Notes. The notes specified in MIL-S-19500 are applicable to this specification.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Issue of DODISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.1).
- b. Lead finish as specified (see 3.3.1).
- c. Type designation and product assurance level.

6.3 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:

Army - ER
Navy - EC
Air Force - 17
NASA - NA

Preparing activity:

DLA - ES
(Project 5961-1699)

Review activities:

Army - AR, AV, MI, SM
Navy - AS, CG, MC
Air Force - 13, 19, 85, 99

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
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NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I. RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-S-19500/323E

2. DOCUMENT DATE (YYMMDD)
94/08/26

3. DOCUMENT TITLE
SEMICONDUCTOR DEVICE, TRANSISTOR, PNP, SILICON, SWITCHING,
TYPE 2N3250A, 2N3251A, JAN, JANTX, JANTXV, AND JANS

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)

7. DATE SUBMITTED
(YYMMDD)

(1) Commercial
(2) AUTOVON
(If applicable)

8. PREPARING ACTIVITY

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